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D. Moon

Draft #2

AEROVOX INDUSTRIES AND CORNELL DUBILIER

PCB WASTE PROCESSING

I. Background

Since the 1930's when Aerovox Industries and Cornell-Dubilier Electronics moved to New Bedford, most of the PCB wastes generated by these two firms has been disposed of through the New Bedford Municipal disposal operation.

Solids

From the 1920's until 1970 the primary method of Solid Waste disposal (including residential, commercial and industrial wastes) utilized in New Bedford was incineration.

New Bedford's first incinerator, located off Shawmut Avenue, operated from the 1920's until October 1959 when a new incinerator was constructed on the same site. From 1959 to February 1971 the majority of the city's refuse was processed at this incinerator. The ash residue from both of these incinerators was disposed of on site.

In February, 1971 the city began landfilling all refuse except paper and commercial waste, collected during the city's night collection, which continued to go to the incinerator.

The incinerator was completely closed down in January 1974. Since 1971, when the city started phasing out their incinerator, the city's refuse has been landfilled at the old ash residue disposal site located adjacent to the incinerator.

It should be pointed out that municipal incinerators do not normally operate at the extreme temperatures, and sufficient dwell times necessary to decompose PCB compounds. The relatively low operation temperatures of such equipment would only ~~vaporize~~ volatilize of the PCB's and pollute the atmosphere.

Over the years, most of the PCB contaminated solid waste (gloves, absorbent material, filter materials, etc.) sent to the municipal incinerator was most likely volitalized. However it is suspected that large quantities of PCBs contained in sealed reject capacitors were not volatalized but remained in the capacitors and were landfilled with the ash residue.

If for the period from 1971 thru the first six months of 1975, all the PCB contaminated solid wastes generated by Aerovox and Cornell-Dubilier was disposed of at the New Bedford Shawmut Avenue Landfill, than an excess of 500,000 pounds of PCB wastes are located in this site.

As a result of our plant visits to Aerovox and Cornell Dubilier, both of these companies became aware for the first time that Massachusetts had regulation prohibiting the disposal of PCB waste in landfills unlicensed for hazardous waste disposal.

As a result both of these companies have been storing their PCB solid waste on site awaiting a decision from the State of Massachusetts naming an acceptable site or requiring out of State disposal.

Liquids

In addition to PCB contaminated Solid Waste, Aerovox and Cornell Dublier also generate thousands of pounds of liquid PCB wastes each year. (In 1974 over 200,000 lbs.)

No information was available on the methods utilized for disposal of liquid PCB wastes generated by Cornell

Dubilier and Aerovox prior to 1971. It is suspected that large quantities of these PCB wastes were disposed of at the Shawmut Avenue disposal site.

As a result of comments from various sources including state solid waste officials, it is suspected that substantial quantities of liquid PCB wastes were also disposed of in an old quarry municipal disposal site located on Hathaway Road in New Bedford. A town planner from Fairhaven remembers "Spent PCB's being deposited in the fill in 55 gallon drums." This site, which has been closed down for a couple of years, had reportedly accepted tires, inert roadway demolition wastes, stumps, and some waste oil and sludges. No data is available on the quantities of PCB liquid wastes that may have been disposed of in the site.

A grab sample taken from a stream circumventing the lower portion of this site on Hathaway Rd. was analyzed for PCB. No PCB was detected down to a level of one ppb. There is no hydrogeological information ~~known to exists on this site~~ currently available on this site.

Sludge

There are several effluent discharges from Aerovox and

Cornell-Dubilier (including sanitary wastes from Aerovox and vacuum pump noncontact, cooling water from Cornell-Dubilier) that enter the municipal sewer system. These discharges which are known to contain concentrations of PCBs are treated by the New Bedford waste water treatment plant.

[redacted]

The sludge from this treatment plant (after dewatering to 22% solids) is disposed of in a multiple hearth furnace (max. temps 1600°F). Approximately 1100 lb/hr of sludge (22% solids are destroyed in this incinerator which operates 15 hours per day on the average for a 5 day week. The ash is disposed of in the New Bedford Municipal landfill. (approximately 3 to 4 cu. yds. per day).

Samples of the sludge from this sewage treatment plant were found to contain from 39,000 ppb to 75,000 ppb of polychlorinated biphenals (PCB).

The "Technical Bulletin on Municipal Sludge Management:

Environmental Factors" recommends that "If the PCB's exceed 25 mg/kg dry sludge, then special measures should be taken to ensure at least 95 percent destruction of persistent organic compounds in incineration. This could consist of testing the performance of an incinerator design to verify satisfactory performance ~~from incinerator design to verify satisfactory performance~~ or making allowances in the design. Increased temperature and residence time increase the assurance of destruction. Work with substantially pure PCB's (not sludges) showed essentially complete destruction at an operational temperature of ~~one second~~ of 1600°F and residence time at that temperature of one second.

Arrangements are being made ~~with RIP~~ to test the emissions from the sludge incinerator in New Bedford.

II Description

New Bedford Municipal Disposal Site - Shawmut Avenue

a. Background

This site started accepting the major portion of the wastes generated in New Bedford in 1971. After the first few years of operation during which the site was operated as an open dump, the municipality began a waste spreading, campaction and daily cover operation. While this site still does not have an approved operating

plan, the daily operation is in accordance with state regulations.

b. PCB Monitoring Program

In order to determing whether the PCBs disposed of in this Shawmut Avenue disposal site were migrating out of the landfill, four monitoring wells were installed in the swamp at the toe of the west face of the landfill. This landfill was selected for monitoring because of its proximity to the Dartmouth, MA drinking water supply and because of the large amounts of PCB wastes known to be located at this site.

Groundwater samples were taken from the four wells and analyzed for PCB's. PCB's were only detected in well Number 2 at a concentration of one ppb. A surface leachate seep sample was also taken near well Number 3 and found to contain 10 ppb PCB. Soil samples were taken from three levels during the drilling of well #3. PCB's were detected in the first level (0-7.5 ft.) at a concentration of 7,500 ppb.

Consultant's report is attached.

c. General Information

(1) Site location - Shawmut Avenue, New Bedford, MA

(2) Owner/operator - Municipality of New Bedford

(3) Estimated year site placed in operation - 1920

(4) Area of Site - 40 acres

(5) Area filled to date - 24 acres (height approximately 25 feet above ground level)

(6) Approximate quantities of refuse accepted - 1,500 tons/week of domestic, commercial and industrial wastes.

d. Operational Data

(1) Engineering report prepared by Camp, Dresser and McKee, Inc.

(2) Date plans submitted to State - Preliminary submitted of operating plans by the City engineer in 1974.

(3) Method of fill - ramp modification of area method

(4) Current operational status - site does not have approved operating plans. However spreading, compaction and daily cover operations are in accordance with State regulations.

(5) Leachate control and monitoring - 4 monitoring wells installed 3-76

(6) Leachate discharges - leachate visiable coming from northwest section (2/76)

e. Geological Conditions

(1) General terrain - swampy

(2) Soils - organic, varying thicknesses

(3) Logs of test pit borings - 8 borings made 7/75 (attached)
- 4 borings made 3/76

f. Hydrological data

(1) Groundwater - at surface (wetland)

(2) Proximity to surface water - site surrounded on three sides by wetlands which make up part of Apponagansett Swamp. The site is located approximately 1/2 mile south east of the Paskamanset River. The overall drainage pattern is Northwesterly to a branch at the Paskamanset River.

(3) Proximity to drinking water supplies - The site is located in the watershed of a public drinking water supply (based on surface contours). The drinking water supply services a neighboring town and consists of two gravel pack wells which draw a total of approximately 1 1/2 MGD. The subject disposal site is located approximately 4 miles Northeast of the wells.

g. Source of Information

(1) Greater New Bedford Solid Waste Study 1973
Camp, Dresser and McKee, Inc.

(2) Region I New Bedford PCB Monitoring Program

(3) Jack Turner, New Bedford STP Superintendent